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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, PHU K

ART UNIT

PAPER NUMBER

2628

NOTIFICATION DATE

DELIVERY MODE

11/01/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary	Application No.	Applicant(s)	
	09/761,558	SNYDER ET AL.	
	Examiner	Art Unit	
	PHU NGUYEN	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,4-9,14-64,68 and 70-76 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,4,5,31,32,35-47,52,53,56-64,68,70-74 and 1426 is/are rejected.
- 8) ☒ Claim(s) 6-9,27-30,33,34,48-51,54,55,75 and 76 is/are objected to.
- 9) ☒ Claim(s) 68 are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 2628

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-5, 14-26, 31-32, 35-47, 52, 53, 56-64, 68 and 70-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over WESCOTT et al (5,341,463) in view of United States Geological Survey (USGS Map Projectors).

As per claim 1, Wescott teaches the claimed “method” comprising: providing a first texture map for a first portion of a three-dimensional surface, the first texture map being associated with a first mapping technique” (Wescott, Map projection, figure 7); and “providing a second texture map for a second portion of the three-dimensional surface, the second texture map being associated with a second mapping technique” (Wescott, figure 33; column 8, line 58 to column 9, line 17, column 10, lines 5-18). It is noted that Wescott does not explicitly teach “the second map technique is different from the first mapping technique” as claimed. However, Wescott’s azimuthal, cylindrical projectors (column 1100, lines 26-36) suggests the use of projectors with different properties (e.g., figure 15, Equirectangular projection for the areas at the equator and figure 33, poplar orthogonal projector for the area at the polar-capped map). Westcott’s single projection can be a combination of two (2) different projections; for example, Westcott’s oblique conic or mercator projection is a combination of different projectors

Art Unit: 2628

on different regions of the map (Westcott, column 19, lines 5-29; an oblique conic projection has different projectors for different regions; see also figures 23, 28).

Westcott specifically teaches the different projections on different regions of the earth map to compensate the distortion of mapping a spherical shape into a planar map.

Specifically, Westcott's implementation of an oblique Mercator projection (column 897-900) shows different projections for different regions of the earth (e.g., if

$(\text{abs}(\text{deltax}) > \pi)$ then replace rx by $rx - \text{sign}(\text{tpie}, \text{deltax})$). Furthermore, Westcott's projection with the spherical coordinates (i.e., longitude and latitude coordinates) can be expressed as a projection in the Cartesian coordinate (x, y, z) by translating the spherical coordinates into Cartesian coordinates. It is noted that Westcott's projection is a area-preserving bijections with one-to-one combined mappings of points from spherical regions into a planar map.

It is noted that Wescott does not teach the three texture maps in which the first portion formed by a cylindrical projection separates the second and third portions formed by azimuthal projections. However, it is well known in the art that "a map projection is used to portray all or part of the round Earth on a flat surface" (USGS, page 1, 1st paragraph). USGS further discloses "every flat map misrepresents the surface of the Earth in some way" or in other words, no map can accurately represents the surface of the entire Earth on a flat plane. USGS discloses (page 2, 2nd paragraph):

"The scale of a map on any projection is always important and often crucial to the map's usefulness for a given purpose. For example, the almost grotesque distortion that is obvious at high latitudes on a small-scale Mercator map of the world disappears

Art Unit: 2628

almost completely on a properly oriented large-scale Transverse Mercator map of a small area in the same high latitudes. A large-scale (1:24,000) 7.5-minute USGS Topographic Map based on the Transverse Mercator projection is nearly correct in every respect.”

USGS uses different projectors for different regions of the Earth to accurately represent the Earth at each region. For example, the basic cylindrical Marcator projection is good for the regions of the Earth near the Equator, but distances and areas are grossly distorted near the map's polar regions; while the azimuthal projector is good for the polar regions of the Earth, but not in the Equator regions. It would have been obvious to use the cylindrical projector for regions around the Equator and the azimuthal projectors for the north and south poles of the Earth for an accurate representation of the Earth as a whole on a flat map. Therefore, the claimed “the three texture maps in which the first portion formed by a cylindrical projection separates the second and third portions formed by azimuthal projections” is obvious in view of USGS with the first texture map is the azimuthal projector, and the second and third texture map are the cylindrical projectors.

RESPONSE TO APPLICANT’S ARGUMENTS

Applicant’s arguments filed August 23, 2011 have been fully considered but they are deemed to moot on the new ground of rejection. Specifically, the USGS teaches

Art Unit: 2628

the mapping of the earth into a flat plane using the azimuthal map on the equator regions and the cylindrical projectors on the north-south pole regions.

Claim 4 adds into claim 1 “wherein the cylindrical projection information includes plane-chart projection information” which is just a design choice in view of Wescott’s well known cylindrical projections (Wescott, column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 5 adds into claim 3 “wherein the azimuthal projection information includes equidistant projection information” which is just a design choice in view of Wescott’s well known azimuthal projections (Wescott, column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 14 adds into claim 1 “the cylindrical projection information includes information selected from at least one type of projection information selected from a group comprising plane-chart projection information, equal area information, and Mercator information” (Wescott, figure 20).

Claim 15 adds into claim 1 “wherein the azimuthal projection information includes information selected from at least one type of projection information selected from a group comprising equidistant projection information, stereographic projection information, gnomonic projection information, and equal area projection information”

Art Unit: 2628

(Wescott, column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 16 adds into claim 1 “wherein the first portion is significantly adjacent to both the first and second portions, such that the first portion separates the second and third portions” (Wescott, figure 23; column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 17 adds into claim 1 “wherein the three-dimensional surface is curvilinear” (Wescott, the spherical map with the latitude/longitude lines; figure 7).

Claim 18 adds into claim 1 “wherein the three-dimensional surface includes a spherical surface” (Wescott, the spherical map; figure 7).

Claim 19 adds into claim 1 “wherein providing the first texture map further includes generating the first texture map using the first mapping technique, and providing the second texture map further includes generating the second texture map using the second mapping technique” (Wescott, figures 15, 33; column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 20 adds into claim 1 “wherein at least one of the first and second texture maps includes information based on a rectangular sampling matrix” (Wescott, depends

Art Unit: 2628

on the projections 1-15, figure 15; column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

Claim 21 adds into claim 1 “wherein at least one of the first and second texture maps includes information based on a hexagonal sampling matrix” (Wescott, depends on the projections 1-15, figure 15; column 1100, lines 26-36, column 8, line 58 to column 9, line 17, column 10, lines 5-18).

The amended claim 68 with newly added features of mapping from a hemisphere to a disk and mapping from a disk to a half disk which would have been obvious in view of USGS’ Lambert Azimuthal Equal Area (USGS, pages 11-12) in which each of the north and south hemispheres are projected into the north and south circular disks; and each of the north and south circular disks are projected into the north and south half circular disks to form the whole disk representing the earth.

Claims 22-26, 31-32, 35-47, 52-53, 56-67, 70-74 claim a computer readable medium, apparatus with logic, map set, method based on the method of claims 1-21; therefore, they are rejected under the same reason.

Claims 6-9, 27-30, 33-34, 48-51, 54-55, 75, 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

Art Unit: 2628

independent form including all of the limitations of the base claim and any intervening claims.

The amended claim 68 with newly added features of mapping from a hemisphere to a disk and mapping from a disk to a half disk is now directed to an invention that is distinct from the invention originally claimed for the following reasons: the domain of mapping now becomes the essential elements of the claim 68's structure and no mapping domain is claimed in the original claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 68 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHU NGUYEN whose telephone number is (571)272-7645. The examiner can normally be reached on M-F/8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272 7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2628

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Phu K. Nguyen/
Primary Examiner, Art Unit 2628